

Zero Retries issue 0042 2022-04-15

Technological innovation in Amateur Radio - Data Communications; Space; Microwave... the fun stuff! The Universal Purpose of Ham Radio is to have fun messing around with radios - Bob Witte K0NR. Ultimately, amateur radio must prove that it is useful for society - Dr. Karl Meinzer DJ4ZC. We are confronted by insurmountable opportunities! - Pogo. Nothing great has ever been accomplished without irrational exuberance - Tom Evslin. Irrational exuberance is pretty much the business model of Zero Retries Newsletter - Steve Stroh N8GNJ. What's life without whimsy? - Dr. Sheldon Cooper.

Zero Retries is a unique, quirky little highly independent, opinionated, self-published newsletter about technological innovation in Amateur Radio, for a self-selecting niche audience, that's free (as in beer) to subscribe.

About Zero Retries

Steve Stroh N8GNJ, Editor

Jack Stroh, Late Night Assistant Editor Emeritus

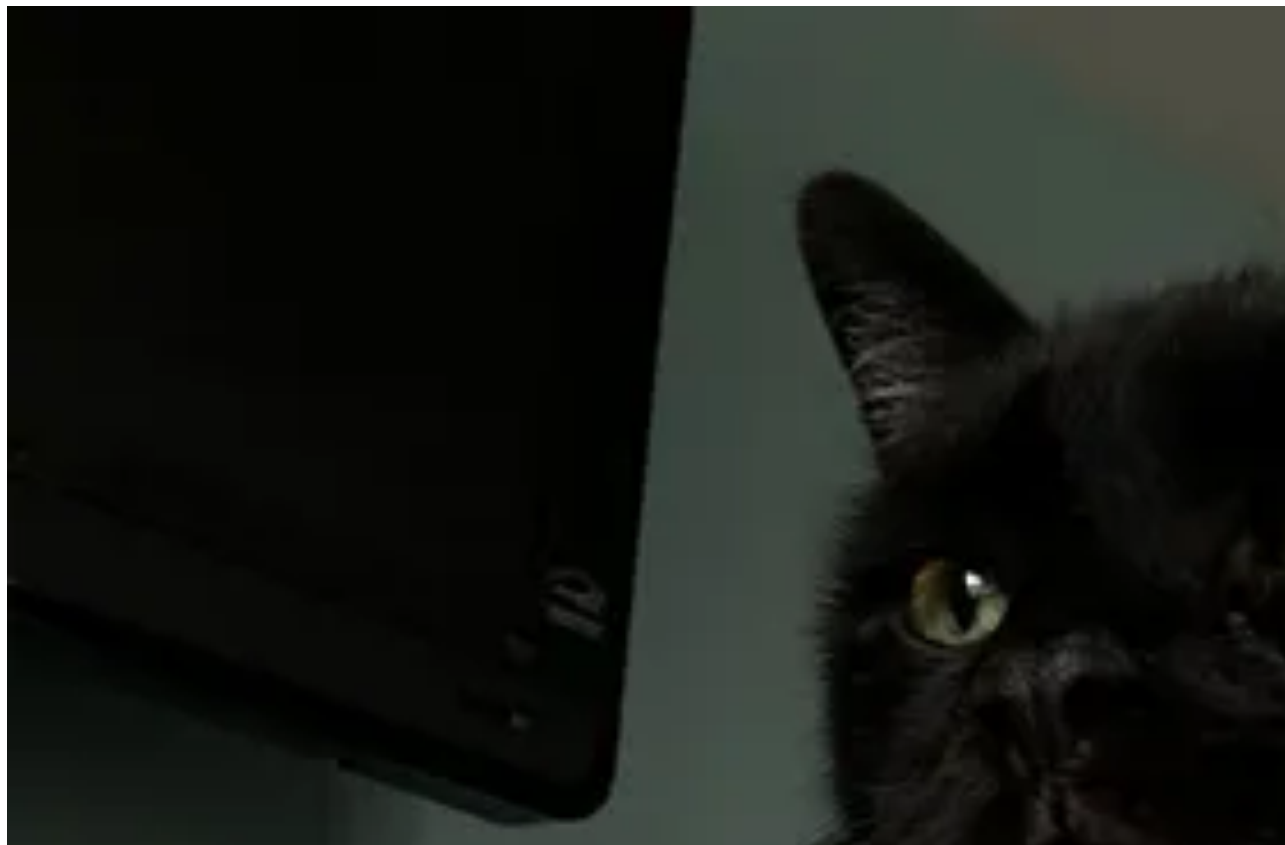
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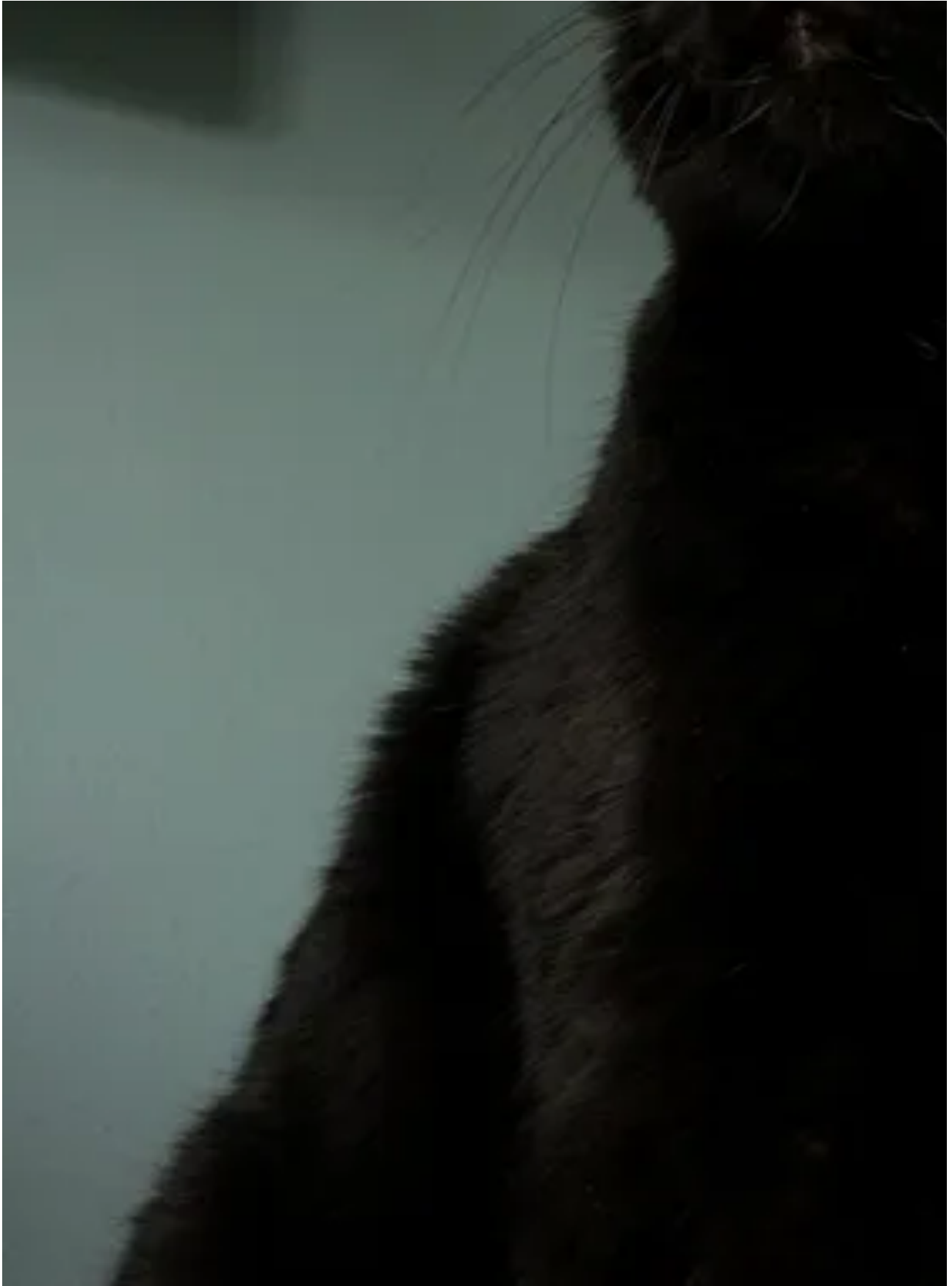
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Request To Send

Countdown to [Hamvention](#) 2022 - May 20-22, in Xenia, Ohio - 5 weeks...

I'm very sad to report that Assistant Late Night Editor Jack Stroh has become a Silent Keyboard. Jack's passing was peaceful, a few hours after Zero Retries 0041 was published last week. (Yes, he has claim as a Silent Keyboard from the many times he “disagreed” with my writing and tried to take control of the laptop keyboard during our late night editing sessions.)





Jack Stroh - Zero Retries Late Night Assistant Editor Emeritus

Because of his invaluable contributions (*really, you have no idea...*) Jack will remain on the masthead of Zero Retries for the life of the publication.

Partially due to Jack's illness, and now preparations for the big trip, I haven't made much progress on the book of late. Active work on the book will resume upon our return to Bellingham in early June.

As Hamvention approaches, the preparation for the big trip intensifies and there will be less time available for editing Zero Retries. Thus I will be (mostly) pre-writing Zero Retries issues 0044 through 0050 so that I can enjoy "the road". The exception to pre-writing will (probably) be Zero Retries 0048 which will be my "Zero Retries Impressions" of Hamvention 2022. *Have laptop will travel!* Given the constraints of Substack, I'll be limited to mostly text for that issue, but the workaround will be to publish a more complete treatment, with photos, on my [N8GNI blog](#).

Thoughts on the Future of Amateur Radio

*This has been a half-finished article parked in Zero Retries limbo for months now, and after Zero Retries 0041's theme of **The New Role of Amateur Radio in Emergency Communications**, it seemed a good (enough) time to finish this and present it. As I re-read it and re-edited it, there's some overlap with Zero Retries 0041. If I had a do-over, I would have published this prior to Zero Retries 0041.*

After some triggering inspiration (which sometimes I'm aware of, sometimes not), my mind will sometimes spawn off background tasks that keep churning away at something, usually ideas, sometimes problems. Often I'm not even aware that such background tasks are active until a solution emerges almost fully formed. Then it's a mad scramble for me to capture the idea before it evaporates out of my mind (no scrap of paper is safe in those moments). That's the case when (for lack of a better description) my personal grand unifying vision for the future of Amateur Radio emerged. I've touched on elements of this in previous issues of Zero Retries, especially Zero Retries 0000, but I've refined and distilled them considerably into these three and a half ideas:

1. *Is Amateur Radio Worth Saving?*

2. A Primary Problem with Amateur Radio is Poor Perception (aka Marketing).

3. ARDC Can Be A Change Agent.

3.5 How Do We Go Forward?

1. *Is Amateur Radio worth saving?* Does it *matter*? More than five years ago, I suffered a "crisis of faith" and I had to ask myself if it was worth trying to participate in, grow my capabilities, and promote Amateur Radio. Was Amateur Radio really worth trying to save? Was it *relevant* to society to justify its overhead - licensing and regulation by national governments and allocation of spectrum?

Ultimately, amateur radio must prove that it is useful for society - Dr. Karl Meinzer DJ4ZC. This was so profound and insightful and relevant to Zero Retries that this quote is now embedded in the masthead of Zero Retries.

Most Amateur Radio Operators reflexively say "*Of course Amateur Radio is worth saving! How could you ask such a silly question?*" Before you (Amateur Radio Operators) reflexively reply such as the above... permit me a thought exercise: *Have you tried to have a conversation with someone who has no knowledge of Amateur Radio, and tried to make the case for Amateur Radio in 2022 and beyond?* Doing so gives you a different perspective.

I have had a number of such conversations, and it generally does not go well. Amateur Radio "earns some points" on the (theoretical, to most) potential of Emergency Communications, but that's about all the headway that can be made.

After a lot of deep thought, my personal conclusion is that yes, Amateur Radio *is* worth saving, it *does* matter, and it *does* justify its overhead in two ways. The first justification is that our society has become irrevocably networked - mostly wireless in the last few hundred feet. We're not going to ever go back (unless forced, such as disaster or war or cyberattack) to not being networked via wireless most of the time. No more than we can go back to living without cars; some can, but the vast majority cannot. Thus, we're going to need many, many thousands of experts in radio technology to maintain and evolve networking via wireless so that it works as well as we need it to, and especially to repair it when it breaks. That's especially true in the US, where we've ceded way too much leadership and expertise to other countries to design and manufacture the fundamental elements of networking via wireless. Amateur Radio can, and in my opinion, *should* be an element of early training and experimentation about radio technology. As I'm fond of saying, *Amateur Radio is literally a license to experiment with radio technology.*

The second justification for saving Amateur Radio is Emergency Communications - with a caveat (generally, the thesis of Zero Retries 0041). Amateur Radio's capabilities to provide emergency communications have evolved considerably from voice and CW (Morse Code) and transcribing information onto paper forms. Amateur Radio can now send data via email via highly reliable methods such as [Winlink](#). Many Amateur Radio operators are now involved in deploying microwave data networks such as [AREDN](#) that incorporate innovative services such as high definition video cameras and Voice Over Internet Protocol (VOIP) telephones. Deploying [Automatic Packet Reporting System \(APRS\)](#) "trackers" enables situational awareness of asset positions, or weather data, in an easy way such as display on a map. Imagine the surprise of an emergency manager when visiting the "Amateur Radio" station in major event and finding high resolution camera displays, quiet chatting on Cisco VOIP telephones, and a map on a large television displaying realtime position of significant assets in the event.

In an emergency, those two justifications overlap. You don't spring into action to set up microwave networks, or restore communications after a disaster without training and experience. Yes, service providers will get the cellular networks back up and running, and governments have their personnel (sometimes) to keep them connected. But it's become apparent there's a vast gulf in large disasters such as hurricanes, tornados, and major power outages where there's no paid experts available to help where there's a critical need. What's needed in such cases are skilled, experienced volunteers like Amateur Radio Operators to help get people, organizations, and facilities back online.

The caveat with this second area is that too many Amateur Radio organizations and individuals are reluctant to embrace such technologies. In their view, "we (I) do *radio* communications. *Maybe* a little bit of that "packet radio stuff." To be relevant in emergency communications, Amateur Radio has to rise to meet these new (current) requirements - email, knowledge of networking, ability to rapidly deploy high speed data networks. In other words, being part of the *solution* in emergency communications (not part of the problem). If you think I'm being overly dramatic about this issue, it's *happening*. Amateur Radio organizations and individuals *are* being un-invited (fired) from participation in emergency communications, at least in part because the capabilities they offer to provide are no longer relevant to the current and future requirements for emergency communications.

Concluding that **Yes, Amateur Radio is worth saving**... was the "easy" part.

2. **A Primary Problem with Amateur Radio is Poor Perception (aka Marketing).** Having concluded that Amateur Radio *is* worth saving, how *do* we save Amateur Radio? That took a lot of thought, and *my* conclusion is that while there are a lot of structural issues in Amateur Radio, the primary issue is that there is no large scale, sustained, promotion of Amateur Radio that portrays Amateur Radio as being relevant in 2022 and beyond. Not only does this perceived lack of relevance hurt Amateur Radio by not attracting (as many) people into Amateur Radio as would be the case if it was perceived as relevant, it impacts Amateur Radio in regulatory issues (Amateur Radio is effectively ignored by the US FCC), and other issues such as simply trying to install antennas and being sued by neighbors.

To be fair, there are many individual “bright spots” of positive promotion and evangelism in Amateur Radio. Some individual Amateur Radio clubs have mastered the art of promotion - within their communities. Other bright spots include individual YouTube channels, websites such as Hackaday that feature content related to Amateur Radio, and (best of all, one of our proudest boasts) Amateur Radio on the International Space Station (ARISS).

But... there hasn't been such a “big”, *sustained promotion effort, done at scale*. One very minor example from “sustained, at scale” from my youth was that QST, CQ, and 73 Magazines used to be displayed on newsstands, such as what you still see at Barnes and Nobles stores. Someone interested in technology could “discover” Amateur Radio from seeing those magazines on the newsstand. In this era, it's kind of hard to encounter Amateur Radio, or even learn much about it, unless you are specifically looking for such information.

Part of this issue is that many people just cannot (don't) see themselves as getting involved in Amateur Radio. They go to a club meeting (back when we did in person meetings) and they see mostly old guys, many espousing crude, conservative views, whose only activity is contesting and DXing on HF. Youth, especially don't see themselves in Amateur Radio. Nor do females, those with progressive views, LGBTQ, those who are using other types of radio (FRS, GMRS, MURS, CB...), those who want to use Amateur Radio as an enabling technology, and those that have modest budgets. Especially folks that are new to Amateur Radio and need help to figure things out in Amateur Radio - mentoring (which Amateur Radio has mangled, for far too long, as “Elmering”).

3. **ARDC1 Can Be a Change Agent.** There is enormous potential for “... a “big”, *sustained promotion effort, done at scale*... in a foundation called [Amateur Radio Digital Communications \(ARDC\)](#) which in 2021 began providing millions of dollars annually in grants to Amateur Radio and other areas of interest to them. Currently ARDC only accepts grant proposals and funds some portion of those. Thus, while ARDC could potentially provide funding for a “big”, *sustained promotion effort, done at scale*..., ARDC would not be the entity creating and managing such a project. It's encouraging that at least such funding is potentially available.
4. **How Do We Go Forward?** I don't know “how” such an effort can be accomplished. I've simply concluded that doing so is an *absolute requirement* if Amateur Radio is to survive. Amateur Radio needs to shed its perception as only an activity for “nerds” (I hate that term too, but it's a pejorative often applied to Amateur Radio) or that Amateur Radio is just something that “Old guys sitting in the basement tapping on a Morse Code key” (aka - Grandpa) do.

At a minimum, the perception of Amateur Radio needs to be “bent” from “nerd activity” to “a cool activity of techies”. One great example of such a change of perception is how Amateur Radio projects and tutorials are mentioned on [HACKADAY](#). On HACKADAY, Amateur Radio is just another technology skillset, equivalent to programming, robot building, 3D printing, modifying existing equipment to do new things, etc. In my opinion, HACKADAY's [matter-of-fact discussions of Amateur Radio](#) are one of the most effective ways save Amateur Radio by effectively promoting it to young folks and techies.

While I've seen a few encouraging efforts from ARRL, such as the [Collegiate Amateur Radio Initiative](#) and [Education & Technology Program](#), in my observations, ARRL just doesn't seem the right organization to create a “big”, *sustained promotion effort, done at scale*... ARRL's organization and focus is on older Amateur Radio Operators who prefer to operate HF, DX, and contesting - as evidenced by the advertising and the amount of space devoted to those activities, including a regular “nostalgia” section, in QST Magazine.

Thus, absent ARRL, I cannot think of an existing organization that could do a “big”, *sustained promotion effort, done at scale*...

But, perhaps... [The Radio Club of America2](#) (“The World's Oldest Radio Society”)? Despite being even older than ARRL, RCA's focus is completely different:

The Radio Club of America promotes the cooperation of those interested in scientific investigation in the art of Radio Communication. With a vision focused on the Future while honoring the Past, RCA strives to encourage, educate, and engage students of all ages and professionals in a myriad of wireless careers.

On the surface, with that statement, RCA seems a better fit than ARRL for a “big”, *sustained promotion effort, done at scale*...

Perhaps... [The Marconi Society](#)? I mention it here only because it has historical legacy in radio, and was [created by the family](#) of Guglielmo Marconi. Their current mission of digital inclusion doesn't seem compatible with Amateur Radio. (It “feels” to me like it *should* be... in my mind, “Marconi” is irrevocably associated with “Radio”).

Perhaps a brand new organization is needed, similar to what happened when Make Magazine was created. Make popularized “Making” and by extension STEM activities, including the creation of Maker Faires and popularized Makerspaces. Perhaps an independent group that can conceptualize a “big”, *sustained promotion effort, done at scale*... could submit a significant multi-year grant to ARDC to fund such an effort.

I hope someone... *someones*... can step forward to do so. Let me know if I can help.

QSO Today “Zero Retries Interesting” Interviews

As mentioned in Zero Retries 0025, Eric Guth 4Z1UG has done the [QSO Today podcast](#) since July, 2014. 4Z1UG interviews one notable Amateur Radio Operator per episode, and as I wrote this (a few months ago now), he has conducted [more than 375 interviews](#).

Since I was looking at 4Z1UG's previous interviews for background listening while I'm doing hands-on, no-concentration-needed tasks, I thought I'd offer my *highly* subjective list of “Zero Retries Interesting” interviews from QSO Today. To compile this list, I skimmed the list for familiar names and call signs. To be clear, I doubt 4Z1UG has interviewed anyone who isn't interesting, but my interests run towards technical topics. Hopefully I can eventually listen to the entire archive of QSO Today.

- [Episode 011 - Wayne Burdick N6KR](#) - Co-founder and CTO of Elecraft.

- [Episode 015 - Bruce Perens K6BP](#) - Open Source evangelist.
- [Episode 016 - Scott Zimmerman N3XCC](#) - Contributor to Repeater Builder.
- [Episode 025 - Dan Romanchik KB6NU](#) - Author of the No-Nonsense Guides.
- [Episode 029 - Ward Silver N0AX](#) - Author of Ham Radio for Dummies.
- [Episode 031 - Kevin Custer W3KKC](#) - Owner of Repeater Builder and Masters Communications (DRA series audio adapters).
- [Episode 034 - Jerry Buxton N0JY](#) - AMSAT VP of Engineering.
- [Episode 049 - Glen Popiel KW5GP](#) - Author of Arduino for Ham Radio.
- [Episode 056 - Glenn Elmore N6GN](#) - Co-creator of a 10 GHz microwave data radio (in 1989).
- [Episode 057 - Gerald Youngblood K5SDR](#) - Founder of FlexRadio.
- [Episode 061 - Phil Anderson K0XI](#) - Founder of Kantronics.
- [Episode 075 - Paul Wade W1GHZ](#) - Amateur Radio microwave evangelist.
- [Episode 085 - Art Bell K6OBB](#) - *Art Bell!* - ‘nuff said. (Muted Microphone)

I plan to queue these, and others, for the big road trip.

I had intended to browse the entire archive list, but I was surprised at how many “Zero Retries Interesting” folks 4Z1UG has interviewed just in the first 99 episodes, and *that* was an ample amount of listening time. Thus, the list for this issue stops at 099, but I’ll do future installments for Episodes 100-199, 200-299, and 300-399. Again, the archive list is [here](#); be sure to check [QSO Today](#) for the most recent interviews.

ZR > BEACON

- **Masters Communications** has launched a [dedicated mailing list](#) for [Masters Communications Digital Radio Adapters \(DRAs\)](#). It’s off to an excellent start in providing highly relevant technical content for using the DRA products, such as [this gem](#) of a list of Amateur radios known to have the 6-pin MiniDIN standard “flat audio” connector for higher speed data communications. There’s also this detailed response on the [subtle design issues of audio adapters](#).
- Pseudostaffer Dan Romanchik KB6NU: [VK5DR, Codec 2 developer, wins 2022 Amateur Radio Software Award](#)
Earlier this week, the Amateur Radio Software Award (ARSA) committee selected David Rowe, VK5DGR, and his project, Codec 2, to receive the 3rd annual Amateur Radio Software Award. The award recognizes projects and their developers for technical innovation, impacts on amateur radio and community involvement. The award includes a \$300 grant.

Updata

- The [KA9Q-Radio project](#) is [now on GitHub](#) to enable collaboration.

Join the *Fun* on Amateur Radio

If you’re not yet licensed as an Amateur Radio Operator, and would like to join the fun by *literally having a license to experiment with radio technology*, check out

Join the Fun on Amateur Radio for some pointers.

Closing the Channel

In its mission to highlight technological innovation in Amateur Radio, grow Amateur Radio, and make it more relevant to society in the 2020s and beyond, Zero Retries is published via email and web, and is available to anyone at no cost. Zero Retries is proud *not to participate* in the Amateur Radio Publishing Industrial Complex!

My ongoing *Thanks* to:

- Tina Stroh KD7WSF for, well, *everything!*
- Pseudostaffers [Dan Romanchik KB6NU](#) and [Jeff Davis KE9V](#) for continuing to spot, and write about “Zero Retries Interesting” items on their respective blogs that I don’t spot on my own.
- [Southgate Amateur Radio News](#) consistently mentions “Zero Retries Interesting” stories.
- The [Substack email publishing platform](#) makes Zero Retries possible. I recommend it for publishing newsletters.

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More bits from Steve Stroh N8GNJ:

- [SuperPacket blog](#) - *Discussing new generations of Amateur Radio Data Communications - beyond Packet Radio (a precursor to Zero Retries)*
- [N8GNJ blog](#) - *Amateur Radio Station N8GNJ and the mad science experiments at N8GNJ Labs - Bellingham, Washington, USA*

Thanks for reading!

Steve Stroh N8GNJ / WRPS598 (He / Him / His)

These bits were handcrafted in beautiful Bellingham, Washington, USA

2022-04-15

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[1](#)

Disclaimer: In 2022, I am a volunteer member of ARDC’s Grants Advisory Committee. I do not speak for ARDC, and the opinion / observation expressed here *are mine alone* and do not represent any official, or unofficial position of ARDC.

[2](#)

Not to be confused with [The American Radio Club](#) which seems to be a commercial entity to sell Amateur Radio test preparation services, but promotes itself as a national Amateur Radio organization.